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ABSTRACT

Given the emphasis on programs for the enhancement of self-concept and achievement, it is critical that adequate validation studies be executed. A sample of fifth- and sixth-grade low SES black children was administered the Stanford Achievement Test and the Sears Self-Concept Inventory. Regression analyses were used to explore the structure of the nomological network embracing academic self-concept, social self-concept, and achievement. A hierarchical model of self-concept is proposed, and implications are drawn for programs focusing on increasing achievement and enhancing self-concept in minority group children. (Author)

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A VALIDATION STUDY OF SELF-CONCEPT IN LOW SES BLACK CHILDREN WITH IMPLICATIONS FOR EDUCATIONAL PROGRAMS

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Abstract

Given the emphasis on programs for the enhancement of self-concept and achievement, it is critical that adequate validation studies be executed. A sample of fifth- and sixth-grade low SES black children was administered the Stanford Achievement Test and the Sears Self-Concept Inventory. Regression analyses were used to explore the structure of the nomological network embracing academic self-concept, social self-concept, and achievement. A hierarchical model of self-concept is proposed, and implications are drawn for programs focusing on increasing achievement and enhancing self-concept in minority group children.

A VALIDATION STUDY OF SELF-CONCEPT IN LOW SES BLACK CHILDREN WITH IMPLICATIONS FOR EDUCATIONAL PROGRAMS

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Several reviews of the literature have shown self-concept to be related to numerous educational variables (Wylie, 1961; Purkey, 1970; Zirkel, 1971, 1972). Nonetheless, it has been difficult to draw definite conclusions from these studies due to a lack of correspondence of definitions, instruments, and populations. Because of this, it is crucial that investigators (1) clearly specify operational definitions of self-concept, (2) indicate the nature of the underlying construct, and (3) give detailed information concerning the population being sampled.

Sears and Sherman (1964) have defined self-concept as one's opinion of the self resulting from abilities, expectations and perceptions embedded in a social milieu. Among other things, feedback from significant others and comparison with one's peers provide the basis for making judgments about the self which "are made in relation to problems and tasks of development." The Sears and Sherman model provides a first approximation to a set of variables relating to self-concept. However, the structure given to this set has been submitted to relatively limited empirical verification.

The validation of theory has two stages. First, one must specify features of the construct and determine their relationships. This process validates what can be labeled as the "within" portion of the construct.

Second, one must identify relationships between the construct's features and related constructs. This process can be considered an exploration of the "between" portion of the construct. These two processes constitute a complete validation of the nomological network. Much of the research on self-concept fails to explicate the nature of the validation process, and therefore leads to a lack of clarity concerning the true relationships that may exist in the nomological network (Shavelson, Hubner, & Stanton, forthcoming).

This paper outlines an approach to research that will avoid the above problems by clearly indicating the hypothesized structure of the construct of self-concept. The objectives are (1) to explore the hypothesis that two facets of self-concept, i.e., academic and social, are independent, and (2) to determine the relationship between academic self-concept, social self-concept, and indicies of academic achievement. The first objective focuses on the within portion of the construct of self-concept and the second deals with the between portion.

Method

Subjects

Thirty-eight fifth-grade (18 girls and 20 boys) and 60 sixth-grade (25 girls and 35 boys) Ss from a school serving predominantly black, low SES children were stratified by classroom. A random sample of approximately half of each classroom was selected to form an experimental group. These Ss were participants in a larger experiment which examined the longitudinal effects of reinforcement on achievement behaviors (Crist, Marx, Whitmore, & Sears, forthcoming). Only pretest data were used in this study to avoid possible effects attributable to the intervention.

Procedures

All Ss were administered the Stanford Achievement Test in the Fall of 1971 by their classroom teachers. Scores on the verbal composite and the quantitative composite were recorded as separate measures. Also in the Fall of 1971, all Ss were administered the revised Sears Self-Concept Inventory (Marx, Peterson, & Nichols, forthcoming) in groups of eight by trained examiners. Total scores were partitioned into an academic self-concept subtest composed of 28 items drawn from the convergent mental abilities, divergent mental abilities, work habits, and school subjects scales, and a social self-concept subtest composed of 20 items from the physical abilities, physical appearance, social relations with the same sex, social virtues, and happy qualities scales. Internal consistancy (Cronbach Alpha) coefficients for the two subtests are .82 and .71, respectively.

Results

Table 1 presents means and standard deviations for the two achievement and two self-concept variables. Surprisingly, verbal and quantitative achievement were higher for the fifth-grade children than the sixth-grade children. Neither of these differences, however, were significant. The girls were higher achievers than the boys in both grades. Collapsing across grade, the girls were higher than the boys on verbal achievement ($F_{1,94} = 4.07$, $p < .05$) and quantitative achievement ($F_{1,94} = 3.35$, $p < .10$). Neither of the two sex by grade interactions on the achievement measures were significant.

Insert Table 1 about here

In both grades, boys show higher social self-concepts than girls ($F_{1,94} = 8.27$, $p < .01$). The negative correlations between sex and social self-concept were a result of the scaling procedure (boys were coded "1" and girls "2"). There were no grade differences on the self-concept measures, but on social self-concept the boys were significantly higher than the girls ($F_{1,94} = 8.27$, $p < .01$). The grade by sex interaction was marginally significant for academic self-concept, with the girls scores going up from the fifth to the sixth grade, and the boys' scores going down ($F_{1,94} = 3.88$, $p < .10$). Since the boys' achievement scores declined, while the girls' scores were mixed (deterioration in verbal achievement and improvement in quantitative achievement), this finding is consonant with self-concept theory.

The correlations among the four achievement and self-concept variables, and sex are shown in Table 2. The strongest correlations are

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Insert Table 2 about here

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between the two achievement tests and the two self-concept measures. In both grades social self-concept is negatively correlated with the two achievement scores. Apparently higher achieving children in both grades have lower social self-concepts, while academic self-concept is <u>not</u> related to achievement in either grade. This contradicts the usual prediction from self-concept theory, that self-concept, particularly academic self-concept, and achievement are positively related. These data suggest that for this population, school success may be a negative force on social self-concept, while it apparently has no effect on academic self-concept. An alternative explanation is that more socially successful students do not

look to school for the enhancement of self-esteem, whereas less socially successful students do.

Table 3 shows the same correlations as Table 2 with the two groups pooled. Grade was added, but failed to correlate with any other variable. The correlations in Table 3 reflect the patterns discussed from Table 2.

Insert Table 3 about here

Separate stepwise multiple regression analyses (Table 4) for grade five and for grade six were performed with academic self-concept serving

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Insert Table 4 about here

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as the criterion and sex, social self-concept, verbal achievement, and quantitative achievement as predictors. A third analysis pooled the two groups. Except as noted, all predictors were allowed to freely enter the prediction equation in an order determined by the greatest partial correlation coefficient criterion (see Draper & Smith, 1966).

Social self-concept was the most consistent predictor of academic self-concept, with nearly identical patterns for the two grades. Quantitative achievement followed in both grades, but was a much stronger predictor for the sixth grade than for the fifth grade. Also, sex entered the equation for the sixth grade, but not the fifth grade.

The findings for the pooled data parallel the separate analyses. Grade was forced into the equation first, but failed to contribute to the prediction. As before, social self-concept and quantitative achievement were strong predictors of academic self-concept.

It is clear from the correlation tables (cf. Tables 2 and 3) that the best predictor of one self-concept subtest score is the other self-concept subtest score. The regression analyses with academic self-concept as the criterion corroborate this conclusion. An additional question, however, concerns the subsequent predictors, i.e., verbal achievement, quantitative achievement, sex, and grade, are they the same for social self-concept as for academic self-concept? The question addresses the issue of whether within portions of a construct may have different between portions. For example, it is reasonable to predict that correlates of academic self-concept are different than those for social self-concept in that the processes leading to positive self-esteem for academic performance may be different than those leading to positive self-esteem for social relations.

To answer these questions, an additional set of regression equations was calculated, with social self-concept as the criterion and academic self-concept included in the set of predictors. The same procedures were followed as above, with all variables entering freely according to the greatest partial correlation-coefficient criterion, except that grade was forced into the equation first for the pooled analysis.

The results of this second set of predictions are shown in Table 5. The results parallel those of the prior analyses. The only difference

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Insert Table 5 about here

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was that in the pooled equation, sex was a significant predictor of social self-concept while it was not in the pooled equation predicting

academic self-concept. The predictions were somewhat stronger in the second set of the equations, accounting for more total variance.

Discussion

The data strongly suggest that for the population sampled here, academic self-concept is more strongly related to another feature of self-concept, i.e., social self-concept, than it is to academic achievement. This finding alters Sears' original nomological network in two respects. First, there has been no specification of the within portion of self-concept for Sears' model. This study supports the conclusion that self-concept, when measured by the Sears' instrument, may be described as a hierarchical construct, paralleling Vernon's model of intelligence. Specifically, the fact that social self-concept and academic self-concept share a limited portion of their variances suggests a weak but operative general facet in addition to the presence of two fairly differentiable facets, social and academic. Second, the between portion of Sears' nomological network hypothesizes a relatively strong relationship between academic self-concept and achievement. These data indicate a weak relationship when achievement is measured by a standardized test. Therefore, the between portion of the nomolgical network requires modification.

The achievement-self-concept relationship might vary as a function of the type of achievement measure. For example, Torshen (1969) using an earlier edition of the Sears test, found that grades were more highly correlated with total self-concept than were achievement test scores. Furthermore, the correlation between achievement test scores and total self-concept dropped to zero when variance due to grades was partialled

out, while the correlation between grades and total self-concept remained virtually unchanged when achievement test variance was partialled out.

The relationships between self-concept subtest scores and achievement are mixed. As predicted, academic self-concept was positively related to verbal and quantitative achievement, but the correlations were not significantly different from zero. An unexpected finding was that the achievement measures had significant negative correlations with social self-concept. This finding, along with the moderate correlations between the two self-concept subtests, indicate that these students are able to differentiate the academic and social facets of self-concept. The moderate correlation between the facets suggests that they share some variance, which may be called general self-concept. This correlation, however, accounts for only about a third of the predictable variance in the facets. Thus, there is a large amount of predictable variance left unaccounted for that can relate to variables in the between portion of the nomological networks. Two variables, verbal and quantitative achievement, included in the proposed between portions of the nomological networks have been shown here to be more strongly related to social than academic self-concept. Other variables (e.g., child's perception of his ability, attitude toward subject matter or social relations, comparison with peers) are also hypothesized as elements in the between portions of the nomological networks. Additional construct validity research must be done to explicate the roles these variables play in the nomological networks of the two self-concept facets.

Two hypotheses were suggested above to explain the negative relationship between social self-concept and achievement. First, children

who are visibly successful at school are rejected by their peers, resulting in low social self-concept. Second, children who are regarded highly by their peers reject school success as a means for enhancement of self-esteem, while children who are rejected socially try to enhance self-esteem through academic achievement.

There is a significant implication for educational programs, if these relationships can be replicated in other samples from similar populations. In particular, many programs attempt to bolster academic achievement by enhancing self-concept. This approach may be misdirected. Even if self-concept can be modified by school programs, which is problematic, the data from this study imply that the relationship between academic self-concept and achievement is weak. Therefore, the enhancement of self-concept will probably not lead directly to improvements in students' achievement.

The goal of enhancing self-concept is admirable and should be pursued in its own right. However, the expectation of increased achievement as a direct result of enhancement of self-concept in black, lower SES children in grades five and six is unwarranted.

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TABLE 1

Means and Standard Deviations for Verbal and Quantitative Achievement and Social and Academic Self-Concept

	5		6		Pooled	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Verbal achievement						
Girls	4.53	1.14	4.34	1.12	4.42	1.11
Boys	4.14	1.28	3.70	1.31	3.86	1.30
Total	4.32	1.21	3.97	1.26	4.10	1.25
Quantitative achievement						
Girls	4.59	1.45	4.80	1.13	4.72	1.26
Boys	4.35	1.27	4.08	1.26	4.18	1.26
Total	4.47	1.34	4.38	1.25	4.42	1.28
Social self-concept						
Girls	3.15	.51	3.24	.46	3.20	.48
Boys	3.54	.54	3.48	.58	3.50	.55
Total	3.35	.54	3.38	.54	3.37	.54
Academic self-concept						
Girls	3.21	.37	3.47	.61	3.36	.53
Boys	3.49	.52	3.27	.67	3.35	.63
Total	3.36	.47	3.35	.58	3.35	.58

TABLE 2

Correlations Among Variables for the Fifth Grade (Above Diagonal) and Sixth Grade (Below Diagonal)

	1	2	3	4	5
1. Sex		.17	.09	-.37*	- 30
2. Verbal Ach.	.25		.66**	-.26	.07
3. Quantitative Ach.	.29*	.74**		-.33*	.09
4. Social SC	-.22	-.21	-.39**		.51**
5. Academic SC	.15	.20	.22	.52**	

Note: Significance tests are two-tailed. Since the test statistics for the correlations are not independent due to the correlations being formed from the same samples, these significance levels should be interpreted with considerable latitude.

*$p < .05$, **$p < .01$

TABLE 3

Correlations Among Variables for the Fifth and Sixth Grades Pooled

	2	3	4	5	6
1. Grade	-.06	-.14	-.03	.04	-.01
2. Sex		.22*	.21	-.28**	.01
3. Verbal Ach.			.71**	-.23*	.16
4. Quantitative Ach.				-.36**	.17
5. Social SC					.51**
6. Academic SC					

Note: Significance tests are two-tailed. Since the test statistics for the correlations are not independent due to the correlations being formed from the same samples, these significance levels should be interpreted with considerable latitude.

*$p < .05$, **$p < .01$

TABLE 4

Prediction of Academic Self-Concept

Analysis	(r) Zero-order correlation	(R) Multiple correlation	(R^2) Total proportion of variance accounted for	(R^2) Increase in variation accounted for	(b) Sample regression coefficient	F to enter
Grade 5						
a = 1.13						
Social self-concept	.51	.51	.26	.26	.53	12.58**
Quantitative achievement	.17	.58	.33	.07	.10	4.00*
Grade 6						
a = -1.01						
Social self-concept	.52	.52	.27	.27	.88	21.63**
Quantitative achievement	.22	.69	.48	.21	.23	22.56**
Sex	.15	.71	.51	.03	.24	3.54†
Pooled						
a = 0.17						
Grade	-.01	.01	.00	.00	-.01	0.00
Social self-concept	.51	.51	.26	.26	.72	33.71**
Quantitative achievement	.17	.64	.41	.15	.19	23.74**

†p < .10
*p < .05
**p < .01

TABLE 5

Prediction of Social Self-Concept

Analysis	(r) Zero-order correlation	(R) Multiple correlation	(R^2) Total proportion of variance accounted for	(R^2) Increase in variation accounted for	(b) Sample regression coefficient	F to enter
Grade 5						
a = 1.94						
Academic self-concept	.51	.51	.26	.26	.62	12.58**
Quantitative achievement	-.33	.63	.40	.14	-.15	8.34**
Grade 6						
a = 2.75						
Academic self-concept	.52	.52	.27	.27	.54	21.63**
Quantitative achievement	-.39	.73	.53	.26	-.21	32.03**
Sex	-.22	.75	.56	.03	-.20	3.88†
Pooled						
a = 2.60						
Grade	.04	.04	.00	.00	.01	0.08
Academic self-concept	.51	.51	.26	.26	.54	33.71**
Quantitative achievement	-.36	.69	.47	.21	-.18	37.46**
Sex	-.28	.71	.51	.04	-.21	6.78*

†p < .10
*p < .05
**p < .01